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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/804,434	03/18/2004	Henry P. Moreton	NVIDP015A/P001241	7140

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Zilka-Kotab, PC
P.O. BOX 721120
SAN JOSE, CA 95172-1120

EXAMINER	
AMIN, JWALANT B	

ART UNIT	PAPER NUMBER
2628	

MAIL DATE	DELIVERY MODE
06/27/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Advisory Action Before the Filing of an Appeal Brief	Application No.	Applicant(s)	
	10/804,434	MORETON ET AL.	
	Examiner	**Art Unit**	
	JWALANT AMIN	2628	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 09 June 2008 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE.

1. ☒ The reply was filed after a final rejection, but prior to or on the same day as filing a Notice of Appeal. To avoid abandonment of this application, applicant must timely file one of the following replies: (1) an amendment, affidavit, or other evidence, which places the application in condition for allowance; (2) a Notice of Appeal (with appeal fee) in compliance with 37 CFR 41.31; or (3) a Request for Continued Examination (RCE) in compliance with 37 CFR 1.114. The reply must be filed within one of the following time periods:

a) ☐ The period for reply expires ______months from the mailing date of the final rejection.

b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.

Examiner Note: If box 1 is checked, check either box (a) or (b). ONLY CHECK BOX (b) WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

NOTICE OF APPEAL

2. ☐ The Notice of Appeal was filed on _____. A brief in compliance with 37 CFR 41.37 must be filed within two months of the date of filing the Notice of Appeal (37 CFR 41.37(a)), or any extension thereof (37 CFR 41.37(e)), to avoid dismissal of the appeal. Since a Notice of Appeal has been filed, any reply must be filed within the time period set forth in 37 CFR 41.37(a).

AMENDMENTS

3. ☐ The proposed amendment(s) filed after a final rejection, but prior to the date of filing a brief, will not be entered because
   (a) ☐ They raise new issues that would require further consideration and/or search (see NOTE below);
   (b) ☐ They raise the issue of new matter (see NOTE below);
   (c) ☐ They are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
   (d) ☐ They present additional claims without canceling a corresponding number of finally rejected claims.
   NOTE: _____. (See 37 CFR 1.116 and 41.33(a)).
4. ☐ The amendments are not in compliance with 37 CFR 1.121. See attached Notice of Non-Compliant Amendment (PTOL-324).
5. ☐ Applicant's reply has overcome the following rejection(s): _____.
6. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
7. ☐ For purposes of appeal, the proposed amendment(s): a) ☐ will not be entered, or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.
   The status of the claim(s) is (or will be) as follows:
   Claim(s) allowed: _____.
   Claim(s) objected to: _____.
   Claim(s) rejected: _____.
   Claim(s) withdrawn from consideration: _____.

AFFIDAVIT OR OTHER EVIDENCE

8. ☐ The affidavit or other evidence filed after a final action, but before or on the date of filing a Notice of Appeal will not be entered because applicant failed to provide a showing of good and sufficient reasons why the affidavit or other evidence is necessary and was not earlier presented. See 37 CFR 1.116(e).
9. ☐ The affidavit or other evidence filed after the date of filing a Notice of Appeal, but prior to the date of filing a brief, will not be entered because the affidavit or other evidence failed to overcome all rejections under appeal and/or appellant fails to provide a showing a good and sufficient reasons why it is necessary and was not earlier presented. See 37 CFR 41.33(d)(1).
10. ☐ The affidavit or other evidence is entered. An explanation of the status of the claims after entry is below or attached.

REQUEST FOR RECONSIDERATION/OTHER

11. ☒ The request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
12. ☐ Note the attached Information *Disclosure Statement*(s). (PTO/SB/08) Paper No(s). _____
13. ☐ Other: _____.

/Kee M Tung/
Supervisory Patent Examiner, Art Unit 2628

Continuation of 11. does NOT place the application in condition for allowance because:

Regarding claims 1, 16 and 17, the applicant argues that Aleksic and Cosman do not teach "... modifying is based on a depth-component of the algorithm" (see pg. 2-5 of applicant's remarks). The applicant further argues that "... there is no suggestion that the normal shading component of Aleksic is the same as the angular tilts of Cosman" (see pg. 3-4 of applicant's remarks).

However, the examiner interprets that Aleksic teaches modifying a value (x) (N summed with ΔN produces a resulting vector N + ΔN, which is perpendicular to the bumped surface) based on an algorithm (addition corresponds to algorithm), wherein modifying is based on the normal shading component (col. 1 lines 52-57, col. 3 lines 4-6, col. col. 4 lines 1-35, col. 6 lines 25-32, col. 10 lines 2-19; it should be noted that normal shading component is a product of a normal vector of a object and a light vector; when vector N + ΔN is multiplied with the light vector L, it results in the desired shading function for this the particular pixel location and thus determine bump mapping pixel-by-pixel; the display value of a pixel is thus determined using the bump-shading component and a normal shading component, which includes a normal vector; it should be further noted that it is known to one of ordinary skill in the art that a normal vector of a bump map represents it's curvature).

Although Aleksic teaches the claimed limitations as stated above, Aleksic does not explicitly teach normal vector is related to the depth-component. However, Cosman teaches to calculate angular tilts U and V from the values in height map and stored in bump angle memory (col. 1 lines 55-57, col. 6 lines 15-50; it should be noted that the angular tilts values U and V as taught by Cosman are used to calculate the bump curvature values; it should be specifically noted it that the examiner interprets that the angular tilt of the bump map is considered as functional equivalent to the normal vector as both the angular tilt and the normal vector represents the curvature of the bump map; also it should be noted that both the references of Aleksic and Cosman are analogous art as they teach bump-maps; height map is the functional equivalent of a depth map; values of height map corresponds to the depth value; therefore, Cosman teaches to derive the normal vector from the depth map (depth-component), and Aleksic already teaches that modifying is based on the normal vector). Therefore, it would have been obvious to one of ordinary skill in art at the time of present invention to calculate the angular tilts from the height map as taught by Cosman and apply it into the method Aleksic because by applying the local tilt to the surface normal of a bump texture map helps to crease illusions of bumps (col. 1 lines 55-57).

Regarding claim 5, the applicant argues that Aleksic and Cosman do not teach "... modifying allows a lighting operation to display an interaction of display objects" (see pg. 5-6 of applicant's remarks).

However, the examiner interprets that Aleksic, in view of Cosman teaches to tune the modification values stored with a polygon to achieve correct brightness of the ocean within the specular area (col. 1 lines 55-57, col. 6 lines 15-67, col. 9 lines 6-15 and lines 35-67, col. 10 lines 1-54; it should be further noted that it is known to one of ordinary skill in the art that a normal vector of a bump map represents it's curvature; it should be noted that the angular tilts values U and V as taught by Cosman are used to calculate the bump curvature values; it should be specifically noted it that the examiner interprets that the angular tilt of the bump map is considered as equivalent to the normal vector as both the angular tilt and the normal vector represents the curvature of the bump map; height map is the functional equivalent of a depth map; also it should be noted that both the references of Aleksic and Cosman are analogous art as they teach bump-maps; therefore, Cosman teaches to derive the normal vector from the depth map (depth-component), and Aleksic already teaches that modifying is based on the normal vector; it should be noted that wave bump map and ocean corresponds to displayed objects; it should also be noted that wave bump map displayed on a simulated ocean generates an interaction between the displayed objects, wave bump map and the ocean, to cause an animation effect; therefore it is reasonable to assume that the wave bump map and the ocean correspond to the interactive of displayed objects; it should be noted that raising the brightness of the scene to overall average brightness to compensate for the brightness decrease in areas near the specular highlight is functional equivalent of a lighting operation; when the brightness value of the scene is changed, it affects the lighting of the scene as displayed to a viewer; it should be noted that the actual modification values stored within a polygon to increase the brightness of areas surrounding the highlight will depend on the nature of the bump map). Therefore, it would have been obvious to one of ordinary skill in art at the time of present invention to allow lighting operation display interaction between displayed objects as taught by Cosman and apply it into the method Aleksic because such a method helps to decrease the brightness of the specular highlights in a well behaved way to control the highlight aliasing (col. 3 lines 25-27).

Regarding claims 14 and 15, the applicant argues that Aleksic, Cosman and Jenkins do not teach "... y equals three, and wherein y equals four, especially where X includes (n * Tproj[y]), where Tproj[y] includes the projection transform" (see pg. 7-8 of applicant's remarks).

However, the examiner interprets that Aleksic and Cosman, in view of Demers teach to transform incoming texture coordinates, geometry or normals pertaining to a surface in object space into projected texture coordinates in homogeneous eye space (col. 8 lines 10-24, col. 9 lines 12-61; matrix transformation producing projected texture coordinates corresponds to projection transformation of the incoming texture coordinates or normals; normals [Nx, Ny, Nz] corresponds to vector; the dot product calculation between the normals and the matrix corresponds to (n*Tproj[y]), which further implies that X includes the dot product calculation between the normals and the matrix; it should be noted although the reference does not use same terminology as the claimed invention, the functional equivalents of the related terms has been suggested by the examiner). Therefore, it would have been obvious to one of ordinary skill in art at the time of present invention to produce projected texture coordinates in homogeneous (eye) space using matrix transformation as taught by Demers into the system of Aleksic and Cosman because matrix transformation could be used for any type of texturing dependent on the geometry of the object (e.g. environment mapping, reflection mapping, etc) (col. 10 lines 65-67 and col. 11 lines 1-5).

Although the combination of Aleksic, Cosman and Demers teach all of the claimed limitations as stated above, they do not explicitly teach y equals three and y equals four. However, Jenkins teaches a case when viewpoint motion vector is parallel to view direction vector, object space x and y values are constant while z value varies (col. 53 lines 56-67, col. 54 lines 38; constant y corresponds to y=3 or y=4; it should be noted that by y = 3 and y = 4, the examiner interprets the value of y stays constant during the transformation process). Therefore, it would have been obvious to one of ordinary skill in art at the time of present invention to use constant values of y as taught by Jenkins into the system of Aleksic, Cosman and Demers because these method gives exact results requiring fewer floating point operations

than the floating point operations required for multiplication of a vector [x y z] by a general transformation matrix, and reduce the cost of transformation-projection (col. 54 lines 20-23 and lines 29-34).